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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/494,877	01/31/2000	Zhigang Fang	34098/GTL/S61	4072

7590

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EXAMINER

JENKINS, DANIEL J

ART UNIT

PAPER NUMBER

1742

DATE MAILED: 05/01/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/494,877

Applicant(s)

FANG ET AL.

Examiner

Daniel J. Jenkins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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1. The Examiner has carefully considered Applicant's Response of 4/2/03.

Firstly, the Examiner has reconsidered his position as stated in the Interview Summary of 3/13/03 as to the teaching of Fang et al. to a non-cemented WC being the initial phase in col. 5, lines 50-57. The Examiner finds that this discussion is directed at the source of the WC, but that in any case, the hard phase is still cemented, which is directed away from Applicant's disclosure.

However, the Examiner still finds that a first phase exists with the WC of Fang et al., and cannot be distinguished by the current claim language which attempts to contrast the first phase of "non-cemented" hard particles with the cemented hard particles of Fang et al. In particular, wherein Fang et al. discloses the cementing binder of Co and a ductile binder of Co, the cermet would have the two phases of Co and hard particles.

The Examiner further notes that the hard particle size limitation is met by the WC particle size of Fang et al. Fang et al. disclosing the cemented particle size of not less than 20 um (col. 6, lines 28-30), but with WC particle size of 1-15 um (col. 9, lines 24-27).

Additionally, Applicant has not addressed the problem with reference to Figures in the Specification.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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3. Claims 1-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fang et al. '382.

Fang et al. '382 disclose the invention substantially as claimed. Fang et al. '382 disclose a cermet material comprising :

a WC hard phase; and

a binder phase of Fe-Ni-Co alloys (col. 7, line 8-13.

Fang et al. '382 disclose that the binder phase have a low coefficient of thermal expansion (CTE) of less than $8\mu\text{m}/\text{m-K}$.

Fang et al. further disclose a WC particle size of 1-15 μm (col. 9, lines 24-27).

Thus, Fang et al. '382 discloses that the CTE is a effective variable within the invention that is modified based on the desired toughness of the material.

Fang et al. '382 further disclose wherein the hard phase can comprise other carbides with the WC including TiC (col. 8, line 21-29) and can further include carbides, borides, nitrides, carbonitrides, carboborides, and mixtures thereof, such as those based on Ti (col. 8, lines 21-27).

Fang et al. '382 further disclose that the material be used in forming a cutting element. The determination of the ratio of the binder phase materials would be determined by one of ordinary skill through routine experimentation based on the specific selection of hard phase material and the desired toughness of the final material.

4. The disclosure is objected to because of the following informalities: the references to Figs 2 through 5 appear to be incorrect. For example, at page 13, line 33,

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Fig. 5 appears to be in error and that Fig. 2 would be proper. The discussion of the Figs later in the Specification seem to be in additional error.

Appropriate correction is required.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Jenkins whose telephone number is 703-306-4157. The examiner can normally be reached on M-TH6:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 703-308-1146. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9593 for regular communications and 703-305-7719 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Daniel J. Jenkins
Primary Examiner
Art Unit 1742

dj
April 20, 2003